

Industrial And Agricultural Technology (IAT) Program Concept, Mission, Standards and Areas of Study

Jay C. Hicken, Professor
Industrial Technology and Education Department
Utah State University
Logan, Utah 84322-6000

Introduction

The following mission statement, program standards, competency areas, and curriculum outline describe the proposed Industrial and Agricultural Technology (IAT) program for small rural schools. Through the implementation of individualized instruction, the IAT program will increase the options of study in industrial and agricultural occupations available to students in the small rural schools in Utah.

Advanced instruction will, in many cases, be provided by non-traditional methods such as distance learning, OJT or apprenticeship, programs at area applied technology centers, or other post-high school institutions. The curriculum will be competency based, providing student learning activities in current technology areas of study.

The IAT steering committee and curriculum development teams are confident that the IAT program will update and improve the quality of instruction and learning in the industrial and agricultural programs in small rural schools in Utah.

The IAT curriculum project is funded by a grant obtained through the Utah State Office for Vocational Education.

Mission Statements (Prepared by the IAT Steering Committee)

1. Provide sound industrial and agriculture training for students in rural schools of Utah.
2. IAT completers should be able to compete in a statewide job market.
3. IAT is limited to rural schools (maximum two teachers).
4. The size of the school should not influence quality or educational opportunity for the students.
5. IAT program will be individualized.
6. IAT program will reflect current technology. The curriculum will be competency based.
7. IAT program will allow students to participate in a youth leadership organization.

Industrial and Agricultural Technology (IAT)

PROGRAM STANDARDS

The IAT program should include the following:

1. An appropriate integration of the skills, information, and laboratory activities unique to Technology Education, Agricultural Education, and Trade, Industrial, and Technical Education.
2. Provide an individualized instructional system of a competency-based curriculum.
3. Provide opportunity for all students to participate in a Vocational Leadership Organization.
4. Provide instruction and activities related to entrepreneurship.
5. Provide occupational guidance and planning as an integral component of the instructional program.
6. Support from a program advisory committee representing the community, parents, and industry.
7. The programs should be "market driven" with the market identified as the community, area, or state.
8. Teacher qualifications = secondary credential and an IAT endorsement (to be developed).

6. Manufacturing Materials and processes including foundry, welding, cabinetmaking, computer controlled machines, metal fabrication, etc.
7. Occupational Guidance Training regarding jobs including aptitude interest inventory, job opportunities (state/area/community), salaries, job conditions, supervised occupational experience programs, and summer agricultural program.

Industrial and Agricultural Technology (IAT)

AREAS OF STUDY

Competencies should be developed in the following areas:

1. **Communications** Oral and written, including visual, audio, design and drafting, computers, photography, graphic communications, telecommunications.
2. **Power/Energy and Mechanics** Hydraulics, pneumatics, mechanical, electrical, including small engines, control, and maintenance of power systems, automation, conservation and alternative energy.
3. **Construction** Carpentry, plumbing, electrical, metal, and other related trades and processes.
4. **Agriculture Science/Technology** Animal systems, plant systems including production, processing, management, sales and service.
Animal Science Agricultural, animal nutrition, physiology, reproduction, management, marketing, and processing.
Plant and Soil Science Agronomical principles and practices related to plant growth and development, marketing, and stewardship of soil resources.
5. **Leadership** Provide opportunity for students to participate in VICA or FFA student organizations including orientation to entrepreneurship.
6. **Manufacturing** Materials and processes including foundry, welding, cabinetmaking, computer controlled machines, metal fabrication, etc.
7. **Occupational Guidance** Training regarding jobs including aptitude interest inventory, job opportunities (state/area/community), salaries, job conditions, supervised occupational experience programs, and summer agricultural program.

Paradigm for Industrial and Agricultural Technology (IAT) for Rural Schools in Utah

Goal: Expanding Career Options and Preparation for All Students

Entrance into Employment or Advanced Educational Opportunities:

Industrial and Agricultural Technology Competency-Based, Self-Paced Occupationally Oriented, Individualized Instruction	IAT Advanced Application 10-12 Grades	All curriculum areas evolve into advanced individual/group inquiry, problem solving, research and development activities										Leadership (TSA, VICA, FFA)—Career Guidance													
		Concurrent Enrollment OJT—Coop Ed, Apprenticeship										Community College University													
IAT Exploratory 9th Grade Level 1	Introductory 7-8 Grades	Awareness K-6 Grades	Design and Drafting	Audio-Visual	Printed Graphics	Electronic Communications	Construction Materials and Processes	Codes and Permits	Construction Engineering	Energy Efficiency	Mechanical Technology	Power/Energy	Electricity/Electronics	Principles of Technology 8-14 (PT 1-7 Required Prerequisite)	Materials and Processes	Production Technology	Equipment Maint. and Repair	Automated Manufacturing	Animal Science	Plant Science	Horticultural Science	Agricultural Management			
																							Principles of Technology—Units 1-7 (Recommended Prerequisite)		
			Communications Technology			Construction Technology			Power/Energy/ Mechanical Technology			Manufacturing Technology			Agricultural Science Technology										
			Technology, Life and Careers--TLC																						
			Technology/Agriculture (Expanded in Above Chart)			Home Ec./ Health Occupations			Business/Marketing																
			Technology in Elementary School																						